Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): In a wireless communications network, a method for coordinating access to a shared transmission medium, said wireless communications network comprising a master node, a plurality of slave nodes, and at least one submaster node, each of said slave nodes and said submaster node controlled by said master node, wherein at least one of said plurality of slave nodes is able to communicate directly with said master node, said method comprising:

upon admission of a new slave node able to communicate directly with said submaster node and out of range of said master node, recording at said a master node a contact path from said master node to said new slave node, wherein said contact path includes said submaster node;

at said master node, generating a schedule of wireless transmission for nodes of said wireless communication network, said schedule precluding collisions between simultaneous transmission by any pair of nodes controlled by said master node including pairs of nodes that do not hear each other's transmissions~~, said schedule including time slots allocated to nodes that can be directly contacted by said master node, said time slots being expandable, wherein generating said schedule includes determining when to expand a first time slot associated with said nodes that can be directly contacted by said master node to accommodate said new node and expanding said first time slot when it is determined that said first time slot is to be expanded~~; and

distributing said schedule from said master node to nodes controlled by said master node.

Claim 2 (canceled)

Claim 3 (previously presented): The method of claim 1 wherein at least one of said time slots includes a subslot allocated for transmission by a node that cannot be directly contacted by said master node.

Claim 4 (original): The method of claim 1 wherein recording said contact path comprises registering a link usable to communicate to said new node to a routing client.

Claim 5 (currently amended): In a wireless communication network, a method for coordinating access to a shared transmission medium, said wireless communications network comprising a master node, a plurality of slave nodes, and at least one submaster node, each of said slave nodes and said submaster node controlled by said master node, wherein at least one of said plurality of slave nodes is able to communicate directly with said master node, said method comprising:

at said submaster node ~~a selected wireless node of said network~~, receiving registration information from a newly contactable slave node, said newly contactable slave mode in direct communication with said submaster node;

forwarding said registration information from said submaster node ~~selected wireless node~~ to said ~~a~~ master node;

at said submaster node ~~selected wireless node~~, receiving from said master node a registration response;

~~at said newly contactable node, transmitting an acknowledgement to said registration response to said master node through said selected wireless node;~~

~~creating a time allocation for said transmission by said newly contactable node by expanding a transmission slot reserved for said selected wireless node;~~

~~at said master node, transmitting said time allocation for transmission by said newly contactable node;~~

at said submaster node~~selected wireless node~~, receiving from said master node a ~~said~~ time allocation for transmission by said newly contactable node; and

transmitting said time allocation for transmission by said newly contactable node to said newly contactable node.

Claim 6 (original): The method of claim 5 further comprising:

at said selected wireless node, receiving a data transmission during a timeslot defined by said time allocation; and

forwarding said data transmission to said master node.

Claim 7 (currently amended): In a wireless communication network, a method for coordinating access to a shared transmission medium, said wireless communications network comprising a master node, a plurality of slave nodes, and at least one submaster node, wherein at least one of said slave nodes is able to communicate directly with said submaster node and is out of range of said master node, said method comprising:

generating a transmission schedule at said ~~a~~ master node~~, wherein said transmission schedule is divided into time slots, at least a first time slot of said time slots being allocated for transmission from a first node that can be directly contacted by said master node to said master node, and wherein generating said transmission schedule includes expanding the first time slot to accommodate transmission from a~~

~~second node that cannot be directly contacted by said master node but can be directly contacted by said first node; and~~

distributing said transmission schedule from said master node to other nodes of said wireless communication network; and

wherein said transmission schedule generated at said master node is divided into a plurality of time slots, each of said plurality of slave nodes within communication range of said master node having at least one of said plurality of time slots allocated thereto for transmission from said slave node to said master node, at least one of said plurality of time slots being allocated for said submaster node and said slave node that is out of range of the master node and able to communicate directly with said submaster node.

Claim 8 (currently amended): Apparatus for operating a master node of a wireless communication network comprising a plurality of slave nodes and at least one submaster node in direct communication with said master node, each of said slave nodes and said submaster node controlled by said master node, said apparatus comprising:

a wireless interface that communicates information via a wireless transmission medium and that receives a transmission originating with a new slave node of said wireless communication network; and

a processor that:

records a contact path from said master node to said new node, said contact path including said submaster node;

generates a schedule of transmission via a shared transmission medium by nodes of said wireless communication network, said schedule precluding simultaneous transmission by any pair of nodes controlled by said master node including pairs of nodes that do not hear each other's transmissions~~, said schedule including time slots allocated to nodes that can be directly contacted by said master~~

~~node, said time slots being expandable, said time slots including a first time slot that is expandable to accommodate said new node when necessary~~; and

distributes said schedule to other nodes of said wireless communication network.

Claim 9 (canceled)

Claim 10 (previously presented): The apparatus of claim 8 wherein at least one of said slots includes a subslot allocated for transmission by a node that cannot be directly contacted by said master node.

Claim 11 (original): The apparatus of claim 8 wherein said processor registers a link usable to communicate to said new node to a routing client.

Claim 12 (previously presented): In a wireless communication network, apparatus for operating a selected node of a wireless communication network, said apparatus comprising:

a wireless interface that communicates information via a wireless transmission medium and that receives a transmission from a new node of said wireless communication network, said transmission comprising registration information for said new node; and

a processor that:

forwards said registration information to a master node of said wireless communication network;

receives from said master node a registration response;

transmits said registration response to said newly contactable node;

receives an acknowledgement to said registration response from said newly contactable node;

transmits said acknowledgement to said master node;

receives from said master node a time allocation for transmission by said new node, said time allocation for transmission by said new node being created by said master node by expanding a transmission slot reserved for said selected wireless node; and

transmits to said new node said time allocation for transmission by said new node.

Claim 13 (original): The apparatus of claim 12 wherein said processor:

receives a data transmission during a time slot defined by said time allocation; and

forwards said data transmission to said master node.

Claim 14 (currently amended): In a wireless communication network, , said wireless communications network comprising a master node, a plurality of slave nodes, and at least one submaster node, wherein at least one of said slave nodes is able to communicate directly with said submaster node and is out of range of said master node , apparatus for operating a master node of said communication network, said apparatus comprising:

a wireless interface that transmits and receives via a wireless transmission medium; and

a processor that:

generates a transmission schedule for nodes of said communication network~~, wherein said transmission schedule is divided into time slots, at least a first time slot of the time slots being allocated for transmission from a first node that can be directly contacted by said master node to said master node, said first time slot being expanded to accommodate transmission from a second node that cannot be directly contacted by said master node but can be directly contacted by said first node~~; and

distributes said transmission schedule from said master node to other nodes of said wireless communication network;

wherein said transmission schedule generated at said master node is divided into a plurality of time slots, each of said plurality of slave nodes within communication range of said master node having at least one of said plurality of time slots allocated thereto for transmission from said slave node to said master node, at least one of said plurality of time slots being allocated for said submaster node and said slave node that is out of range of the master node and able to communicate directly with said submaster node.

Claim 15 (currently amended): In a wireless communication network, a computer program product for coordinating access to a shared transmission medium, said wireless communications network comprising a master node, a plurality of slave nodes, and at least one submaster node, each of said slave nodes and said submaster node controlled by said master node, wherein at least one of said plurality of slave nodes is able to communicate with said master node, said product comprising:

code that, upon admission of a new slave node in direct communication with said submaster node and out of range of said master node, to said wireless communication network, records at said ~~a~~ master node a contact path from said master node to said new slave node, wherein said contact path includes said submaster node;

code that, at said master node, generates a schedule of wireless transmission for nodes of said wireless communication network, said schedule precluding simultaneous transmission by any pair of nodes controlled by said master node including pairs of nodes that do not hear each other's transmissions~~, said schedule including time slots allocated to nodes that can be directly contacted by said master node, said time slots being expandable, wherein said code that generates said schedule includes code that determines when to expand a first time slot associated with said nodes that can be directly contacted by said master node to accommodate said new node and code that expands said first time slot when it is determined that said first time slot is to be expanded~~;

code that distributes said schedule from said master node to nodes controlled by said master node; and

a computer readable storage medium that stores the codes.

Claim 16 (canceled)

Claim 17 (previously presented): The product of claim 15 wherein at least one of said slots includes a subslot allocated for transmission by a node that cannot be directly contacted by said master node.

Claim 18 (original): The product of claim 15 wherein said code that records said contact path comprises code that registers a link usable to communicate to said new node to a routing client.

Claim 19 (canceled).

Claim 20 (canceled).

Claim 21 (currently amended): In a wireless communication network, a computer program product for coordinating access to a shared transmission medium, said wireless communications network comprising a master node, a plurality of slave nodes, and at least one submaster node in direct communication with said master node and one of said plurality of slave nodes that is out of range of said master node, said product comprising:

code that generates a transmission schedule at a master node~~, wherein said transmission schedule is divided into time slots, at least a first time slot of said time slots being allocated for transmission from a first node that can be directly contacted by said master node to said master node, and wherein said code that generates said transmission schedule includes code that expands the first time slot to accommodate transmission from a second node that cannot be directly contacted by said master node but can be directly contacted by said first node~~;

code that distributes said transmission schedule from said master node to said plurality of slave nodes~~other nodes of said wireless communication network~~; and

a computer-readable storage medium for storing the codes;

wherein said transmission schedule generated at said master node is divided into a plurality of time slots, each of said plurality of slave nodes within communication range of said master node having at least one of said plurality of time slots allocated thereto for transmission from said slave node to said master node, at least one of said plurality of time slots being allocated for said submaster node and said slave node that is out of range of the master node and able to communicate directly with said submaster node.

Claim 22 (currently amended): In a wireless communications network, apparatus for coordinating access to a shared transmission medium, said wireless communications network comprising a master node, a plurality of slave nodes, and at least one submaster node, each of said slave nodes and said submaster node controlled by said master node, wherein at least one of said plurality of slave nodes is in direct communication with said master node, said apparatus comprising:

means for recording at said ~~a~~ master node a contact path from said master node to a new slave node, wherein said contact path includes said submaster node;

means for, at said master node, generating a schedule of wireless transmission for nodes of said wireless communication network, said schedule precluding simultaneous transmission by any pair of nodes controlled by said master node including pairs of nodes that do not hear each other's transmissions~~, said schedule including time slots allocated to nodes that can be directly contacted by said master node, said time slots being expandable, wherein generating said schedule includes determining when to expand a first time slot associated with said nodes that can be directly contacted by said master node to accommodate said new node and expanding said first time slot when it is determined that said first time slot is to be expanded~~; and

means for distributing said schedule from said master node to nodes controlled by said master node.

Claim 23 (canceled).

Claim 24 (previously presented): The method of claim 5 wherein said registration information includes a MAC layer address of said newly contactable node and said registration response includes an IP address.

Claim 25 (new): The method of claim 1 wherein said schedule comprises time slots allocated to nodes that can be directly contacted by said master node and at least one of said time slots comprises a subslot allocated for transmission by one of said slave nodes that cannot be directly contacted by said master node.

Claim 26 (new): The method of claim 1 wherein said schedule comprises time slots allocated to said plurality of slave nodes that can be directly contacted by said master node, said time slots being expandable, wherein generating said schedule comprises determining when to expand a first time slot associated with said nodes that can be directly contacted by said master node to accommodate said new node and expanding said first time slot when it is determined that said first time slot is to be expanded.